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ABSTRACT

The competencies of prospective consumer education teachers were measured, and student and demographic information variables related to achievement scores on the test were identified. Using the National Council for Accreditation of Teacher Education (NCATE) as the sampling frame, a mail survey elicited over 4,000 prospective teacher responses on cognitive consumer education and consumer competency tests. These responses were interpreted to yield information on general knowledge levels and the relationship between this achievement level and size of the teacher education program, sex of the respondent, socioeconomic status, certification level, geographic region, completion of consumer education related courses, and subject majors of the respondents. (MJB)

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A NATIONAL ASSESSMENT OF THE CONSUMER EDUCATION LITERACY OF PROSPECTIVE TEACHERS FROM ALL ACADEMIC DISCIPLINES

By
E. Thomas Garman

U S DEPARTMENT OF HEALTH
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CONSUMER
EDUCATION
LITERACY

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FROM ALL ACADEMIC DISCIPLINES

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EXECUTIVE SUMMARY

The problem of the study was to determine the competencies of prospective consumer education teachers as measured by the Test of Consumer Competencies and to identify student and demographic information variables that are related to the achievement scores on the test. The validity and reliability of the Test of Consumer Competencies as an effective measuring device is most amply evidenced in the award winning research study by Thomas O. Stanley.

The National Council for Accreditation of Teacher Education (NCATE) was selected as the sampling frame since it is the only national accrediting organization for teacher education. Procedures included a mail census survey of all 540 colleges and universities which are members of NCATE to determine the number of students who would graduate between fall 1976 and summer 1977 and also be certifiable to teach. Responses were received from 461 (85%) institutions. Proportional representation of the number of certifiable graduates from each of size strata was obtained randomly, resulting in a total sample of 130 institutions. Eighty-four (64.6%) participated in this study. Thus 15.5% of all NCATE schools, or one-sixth of the total, are represented in the study.

Each school, through the student teaching office, administered the Test of Consumer Competencies to the prospective teachers during February, March and April of 1977. In addition to the cognitive consumer education test data, certain demographic factors were identified by the prospective teachers on the test answer sheet. A total of 5,602 prospective teachers completed the Test of Consumer Competencies resulting in 4,309 usable answer sheets.

The two test forms were virtually equivalent with the mean score on Form A for 2,162 prospective teachers being 32.35 and the mean score on Form B for 2,147 prospective teachers being 32.99. The standard deviation was 6.24 for Form A and 5.85 for Form B. The Kuder-Richardson Formula Number 20 reliability estimates were 0.73 on Form A and 0.69 on Form B. Overall achievement on the Test of Consumer Competencies by the 4,309 prospective teachers was 32.67 with a standard deviation of 6.06. This converts to 59.4 percent correct on the 55-item test.

Achievement on the test was examined in 14 sub-areas. In descending order the four areas in which the prospective teachers were most knowledgeable in terms of percentage correct were Recreation (76%), Clothing (73%), The Individual in the Marketplace (68%), and Furnishings and Appliances (68%). The three areas of lowest achievement were Savings and Investment (50%), Food (48%), and Taxes (45%).

Achievement was not statistically related to the size of the teacher education program nor was the expected date of graduation (January - August, 1977). Somewhat unexpectedly, the socioeconomic status of the prospective teachers as measured by O. D. Duncan's "A Socio-Economic Index for All Occupations" was not statistically related to achievement on the test. Another unexpected finding was that males scored significantly higher (34.04) than females (32.13) at or beyond the 0.001 level.

Those prospective teachers who were certifiable to teach secondary subjects scored 34.03, elementary subjects 31.99 and both elementary and secondary subjects 31.76. These differences were significant at or beyond the 0.001 level.

The 84 institutions were arranged in five geographic regions with prospective teachers from the Western Region scoring highest at 33.55 and those from the Southern region scoring lowest at 32.62. Prospective teachers attending NCATE institutions in the Western, Mountain Plains, and North Central regions scored significantly higher on the Test of Consumer Competencies than those in the Eastern and Southern regions.

Not quite 12% of the prospective teachers (508) had completed one or more consumer education related courses. Those who completed one or more courses scored significantly higher than those who had not completed a consumer education related course. Prospective teachers who completed only one consumer education related course (307) also performed significantly better than those who had not completed such a course.

Achievement on the Test of Consumer Competencies according to major is reported as follows: Social Studies, History or Geography, 35.18; Science, 35.09; Home Economics, 34.99; Business, 34.77; Industrial Arts or Trades and Industry, 34.76; Mathematics, 34.38; Sociology and Psychology, 34.35; English, 33.87; Agriculture, 33.77; Speech, 33.09; Foreign Languages, 32.52; Elementary Education, 31.91; Special Education, 31.68; Art and Music, 31.21; and Physical Education and Health, 31.02. Differences among the majors were significantly different but the combinations are too complex to report here. Since the total number of prospective teachers was so large, significant differences appear more readily than with smaller groups. Thus, differences in scores between majors should be interpreted with caution except when comparing the extremes.

As expected the prospective teachers performed better than the 7,683 Illinois secondary school students who provided the norming data for the Test of Consumer Competencies. A comparison of mean scores indicated that the prospective teachers knew more about cognitive consumer education concepts as measured by the Test of Consumer Competencies than do secondary school students.

A NATIONAL ASSESSMENT OF THE CONSUMER EDUCATION LITERACY OF PROSPECTIVE TEACHERS FROM ALL ACADEMIC DISCIPLINES

THE PROBLEM

Introduction

During the 1960's and 1970's both the interest in consumer education literacy for secondary school students and the amount of research related to consumer education increased rapidly. Local educators, state legislatures and even the federal government have presented many arguments establishing the need for consumer education in the public schools. Most have concluded that consumer education literacy should be obtained before high school graduation.

As a consequence of the increased interest in consumer education in the secondary schools, more consumer education concepts have been introduced to the curriculum, either in the form of special courses or through integration into established subject matter classes. The legislation of nine states requiring consumer education in the secondary schools has been of considerable impetus in this direction. This recent movement toward the teaching of consumer education concepts in the secondary schools was concurrent with an interest in the college level preparation of those teachers charged with the responsibility of providing consumer education understandings for elementary and secondary school students.

A survey of related research indicates a wide range of findings when comparing the teaching competencies of secondary school teachers of consumer education concepts. Furthermore, few studies have attempted to determine the competency of various teachers of consumer education. English, for example, was severely limited in addressing this topic as he asked "what courses were helpful in preparation for teaching consumer education" rather than utilizing a more objective measuring device.[1] In the broad field of consumer education no comprehensive studies exist which measured the consumer education literacy of teachers by means of a consumer education literacy test.

The Problems and Objectives

The problems of the study were twofold:

(1) To determine the competencies of prospective consumer education teachers as measured by the equivalent forms A and B of the Test of Consumer Competencies.

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[1]English, D. E. Relationship of Teacher and Student Attitudes to Consumer Education In the Secondary Schools of Illinois. (Doctoral dissertation, University of North Dakota) Ann Arbor, Mich.: University Microfilms, 1971, No. 72-18162.

(2) To identify what student and demographic information variables are related to the achievement scores of the prospective consumer education teachers on the Test of Consumer Competencies.

The objectives of the project were:

(1) To conduct a nationwide assessment of the consumer education literacy of prospective consumer education teachers as measured by a valid and reliable test.

(2) To examine relationships between achievement of the consumer education test and selected student and demographic information.

(3) To contrast the achievement scores of the prospective consumer education teachers with the achievement scores of secondary school students who had completed a course in consumer education (previously normed data by Stanley, 1975).

Description of the Test of Consumer Competencies

The Test of Consumer Competencies is a valid and reliable standardized test designed to measure cognitive consumer knowledge in 14 areas of consumer education. It consists of two equivalent 55-item multiple choice tests based on 55 performance objectives.

"Validity for the Test of Consumer Competencies is based on performance objectives which are derived from the Illinois Guidelines for Consumer Education, revised edition, 1972."[2] The Illinois Guidelines covers the content of most other state, county and local school district consumer education guidelines. "The number of items from each category in the Guidelines is based on the space given to each item as shown through a study of consumer education texts."[3] All textbooks published through 1974 were utilized.

"The development of the test was accomplished by determining the criteria the instrument would have to meet in terms of reading level, number of items, type of question and general format."[4] For each of the 55 performance objectives two questions were written and then divided into two 55-item instruments: Form A and Form B.

The Test of Consumer Competencies was normed with 7,683 Illinois students in grades 8-12, including 3,857 Form "A" and 3,826 Form "B" instruments. The mean score for all students who completed Form "A" was 22.635, with a standard deviation of 6.673, and a reliability coefficient of 0.733. On Form "B" the mean score was 23.059, with a

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[2]Stanley, T. O. The Development of the Test of Consumer Competencies. (Doctoral dissertation, Northern Illinois University) Ann Arbor, Mich.: University Microfilms, 1975, No. 76-9586. p. 214.

[3]Ibid.

[4]Ibid, abstract.

standard deviation of 6.595 and a reliability coefficient of 0.738. Students scored slightly higher on Form "B" than Form "A", but only by a factor of 0.424 raw-score points. Thus, by customary standards among testing and measurement experts the two test forms were virtually the same and considered to be equivalent forms.

The reliability estimate for the Illinois students based on Kuder-Richardson Formula 20 ranged from 0.687 to 0.858 with the higher reliability coefficients coming from older groups of students. The median reliability coefficient was 0.742. The standard error of measurement was slightly less than three raw-score units for both forms. This means that if a student took the test a second time (without intervening learning), his true score would not be expected to change by more than three points or less in 68% of the retest studies, thus in part demonstrating the consistency of measurement.

The following conclusions were made concerning the Test of Consumer Competencies. The test is valid and reliable when used to measure cognitive consumer education knowledge. Form "A" and Form "B" are equivalent measuring instruments. "Both Form A and Form B measure an equivalent difference in mean scores between students who have completed a course in consumer education and students who have not completed a course in consumer education."[5] (The Stanley dissertation also won two national research awards for excellence in research.)

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[5]Ibid. p. 216.

THE PROCEDURES

The procedures for the study can be divided into the following general categories: a census survey of potential prospective graduates, determination of the sample, preparations for test administration, answer sheets for the Test of Consumer Competencies, and test scoring procedures and data analysis.

Census Survey of Potential Prospective Graduates

The National Council for Accreditation of Teacher Education (NCATE) was selected as the sampling frame since the problem of the study was to determine the competencies of prospective consumer education teachers which might include prospective teachers from any academic discipline. NCATE is a "non-profit voluntary accrediting body devoted exclusively to the evaluation and accreditation of teacher education programs."[6] It is the only national accrediting organization for teacher education. Because more than three-fourths of all teachers graduate from such accredited institutions, it was assumed that certifiable graduates of NCATE schools were representative of prospective teachers in general.

A census survey was mailed to all 540 member institutions of NCATE in September and October of 1976 to determine the total number of prospective graduates at member institutions (fall 1976 through summer 1977) as well as the number of senior students expecting to graduate who would be certifiable to teach. The initial communication was addressed to the Director of Student Teaching at each institution. As an incentive to provide this information each institution was promised a complete summary of the study if they responded to this communication.

A continuous series of communications with the participating institutions was considered essential to maintaining a high level of interest in the project and to help ensure that the desired testing procedures would be conducted uniformly. Throughout the study all communications were individually typed on professionally printed project stationery. After the original request for information was addressed to the "Director of Student Teaching," each successive letter was then personally addressed to the designated representative at each institution.

Responses to the census survey of the 540 NCATE institutions were received from a total of 461 (85.4%) schools. The first mailing in September resulted in 303 responses while 158 responded to the follow-up letter mailed two weeks later.

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[6]National Council for Accreditation of Teacher Education, Annual List 1975-1976. p. 3.

Determination of the Sample

Using these data on the number of graduating seniors as indicative of the size of the institution, and the number of seniors certifiable to teach as indicative of the size of the teacher education program, that preliminary information was compiled to provide a frequency distribution of prospective graduates from among NCATE institutions. Rather than classify the institutions on total size it was decided to classify them according to the number of certifiable graduates, thus indicating the size of the teacher education program rather than size of institution. Generally, however, there was some relationship between total number of graduates and number of graduates who would be certifiable to teach.

Preliminary findings indicated that there would be a considerable number of small institutions graduating a relatively small percentage of the prospective teachers with a few large institutions graduating a substantial percentage of the total. The task was to select a sample that would fairly represent the few very large institutions with large number of certifiable graduates as well as the numerous small institutions producing few certifiable graduates. Since the institutions varied greatly in size the sample needed to be designed to be representative of all NCATE graduates, not just the individual schools.

After closely examining the frequency distribution, the institutions were divided into three size categories based upon the number of graduates certifiable to teach: small (1-199), medium (200-599) and large (600+). The results of the census survey revealed that 214 (47.1%) NCATE institutions expected to graduate less than 200 students who were certifiable to teach, 221 (48.7%) of the institutions planned to graduate between 200 and 599, and 19 (4.2%) institutions expected to graduate between 600 and 1,500 prospective teachers between fall 1976 and summer 1977.[7]

Logically the next step was to determine the number of prospective graduates to test at each institution. In order to do this it was necessary to determine the number of prospective graduates to select as representative of each institution. It was considered desirable for schools of approximately the same size to test a similar number of students in order to get adequate representation and not overburden any particular institutions. With only three size categories the range of prospective subjects was too wide to expect each school in each category to test the same number of students. For example, a school with 199 certifiable graduates might be able to test 50 of them but this would be difficult or impossible for smaller schools in the same category. Another consideration was cost and this

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[7]Seven NCATE institutions reported they did not expect to graduate any certifiable seniors; these institutions had only a master's degree program.

constraint prohibited sampling of more than about eight percent of the total population of certifiable graduates. Therefore the schools were stratified into six size categories, as shown in Table 1, based on the number of certifiable graduates and each was requested to test a given number of their students. The number of students to be tested ranged from 25 at institutions with a relatively small number of certifiable graduates (1-99) to 225 at the institutions graduating the largest number of prospective teachers (1,000+) or about 20 to 25% of the certifiable graduates at each school. The figures in the tables that follow do not always add to 100.0% because of rounding.

TABLE 1

SIZE OF INSTITUTION AND NUMBER TO BE TESTED

Number of Certifiable Graduates	Number of Students to be Tested
1-99	25
100-199	50
200-399	75
400-599	125
600-999	175
1,000+	225

The total number of certifiable graduates in each of the six categories was determined from the initial census survey data. The proper number of institutions selected to participate was determined in the following manner. Due to cost constraints it was only possible to test approximately 8% of the total number of prospective graduates reported. The proper number of schools was obtained by multiplying the total number of students reported in each size strata by .08 and then dividing by the number of students to be tested at each institution. To do this, each size strata was subdivided into a size of 50. For example, the smallest strata (1-199) was divided into groups of 1-49, 50-99, 100-149 and 150-199 for the numerical computations. Each number was rounded upward to the next largest whole number and then totaled for each of the six size strata. This process resulted in a total of 130 schools distributed among the 6 size strata as representative of the number of students in each strata as shown in Table 2.

Each institution was assigned a number and grouped according to the six size strata. The proper number of institutions was randomly selected to participate from each of the size strata by using a table of random numbers.

As shown in Table 3, the 130 institutions selected to participate according to a stratified random sample were widely distributed by the number of certifiable graduates in addition to being quite similar to the distribution of graduates at all NCATE schools reporting to the census survey.

Of the 130 institutions selected to participate in the study, 35 responded to the initial request of November 22, 1976, 66 responded

TABLE 2

DETERMINATION OF PROPER NUMBER OF INSTITUTIONS TO SAMPLE

Size Strata of Certifiable Graduates	Number of Schools Responding	Total Number of Students Reported	Factor for Determination of Sample	Number of Graduates to be Tested	Total Number of Schools
1-99	125	6,882	.08	25	23
100-199	89	12,167	.08	50	20
200-399	114	30,583	.08	75	35
400-599	59	28,296	.08	125	20
600-999	48	37,312	.08	175	22
1,000+	19	21,040	.08	225	10
TOTALS	454	136,280	-	-	130

TABLE 3

SAMPLE SELECTED FOR PARTICIPATION

Number of Certifiable Graduates	Number of Responding NCATE Schools		Number of Institutions Selected to Participate	
	N	%	N	%
1-99	125	27.6	25	19.2
100-199	89	19.6	22	16.9
200-399	114	25.1	30	23.1
400-599	59	13.0	22	16.9
600-999	48	10.6	19	14.6
1,000+	19	4.2	12	9.3
TOTALS	454	100.0	130	100.0

to a reminder letter, and 29 answered a second reminder. Seventy-four agreed to participate. Then, a letter was sent to those institutions that initially refused to participate which again requested their cooperation in the project.

In all, eighty-five of those schools selected agreed to participate in the study. One institution was unable to participate in the study due to extreme weather conditions, thus leaving 84 (64.6%) participating institutions. Therefore, 15.5% of all NCATE institutions, or approximately 1/6 of the total, are represented in this study. This amounts to approximately three percent of all graduates certifiable at NCATE institutions. The distribution of the sample institutions according to the number of certifiable graduates is shown in Table 4 and compared by regions in Table 5. Again, the representativeness of the sample can be readily seen.

After the institutions agreed to participate, a letter was mailed in early December thanking them for their cooperation and providing a "Brief Description of Possible Procedures for Sample Selection." At the same time, a "Return Checklist of Preliminary Information" for indicating preferred test administration dates was sent to participating institutions so they could select a two-week test period between February 15 and April 29. Communications continued in December with another letter confirming the test date chosen and forwarding detailed "Student Selection Criteria and Procedures."

Four possible procedures for sample selection were described for the test administrators. A variety of procedures were selected by the student teaching directors to accommodate the different situations at each institution and make it possible to obtain the desired number of students as randomly as possible within the constraints of each institution.

In brief, the four alternatives described to and utilized by the participating institutions were:

1. Test all seniors graduating by the end of the 1977 summer term who will be certifiable to teach. (This approach is suitable only for small schools.)

2. Select a random sample of all students graduating by the end of the 1977 summer term who will be certifiable to teach. To do this, compile a complete list of all qualified students and select a sample, such as every n^{th} student to meet the necessary total.

3. If there are classes involving senior students from a variety of teaching fields (this could include student teaching seminars), administer the test to all students in some of these classes.

4. If there are no classes involving teacher education students from a variety of fields, select existing senior level classes from as many different disciplines as possible and administer the test to students in those classes.

TABLE 4

THE SAMPLE OF PARTICIPATING INSTITUTIONS

Number of Certifiable Graduates	Number of Responding NCATE Schools		Number of Institutions Which Agreed To Participate	
	N	%	N	%
1-99	125	27.6	21	25.0
100-199	89	19.6	13	15.5
200-399	114	25.1	21	25.0
400-599	59	13.0	15	17.9
600-999	48	10.6	8	9.5
1,000+	19	4.2	6	7.1
TOTALS	454	100.0	84	100.0

TABLE 5

REGIONAL DISTRIBUTION

Region	All NCATE Institutions*		The Sample	
	N	%	N	%
Western	49	9.1	11	13.1
Mountain-Plains	94	17.4	15	17.9
North Central	162	30.1	23	27.4
Southern	128	23.7	26	31.0
Eastern	106	19.7	9	10.7
TOTALS	539	100.0	84	100.0

*Except the University of Puerto Rico.

Preparations for Test Administration

Each school was mailed a package of testing materials approximately two weeks prior to the individual testing period. This included the proper number of test booklets (Form "A" and Form "B" alternated since they are equivalent tests) and answer sheets, a postcard to return to the project center to indicate receipt of the materials, extra copies of the test materials for the school's files, a six-page detailed description of "Suggestions For Pre-test Arrangements" and "Administering the Test," a return mailing label, sufficient return postage, and a return envelope or box. Upon receipt of the completed answer sheets a few weeks later at the project office a postcard was mailed acknowledging their arrival.

Included in the pre-test arrangements were instructions for checking the contents of the testing packet to make sure that all materials were enclosed and an emergency phone number if materials were missing as well as directions for making the following pre-test arrangements:

1. A decision upon the exact testing date(s), time(s), and room(s) for the test.

2. Notification of students of date(s), time(s), and room(s) for the test.

3. Read thoroughly the six-page detailed description of "Suggestions for Pre-test Arrangements" and "Administering the Test" before administration begins.

The instructions for administering the test were given in great detail to avoid ambiguity and answer potential questions which might arise. Of the 85 schools only two called for clarification.

Answer Sheets for the Test of Consumer Competencies

The answer sheet for the Test of Consumer Competencies, available from Scholastic Testing Services,[8] was slightly modified and over-printed to provide spaces for the student demographic information, as well as to block out unnecessary information. These answer sheets were the op-scan type designed by National Computer Systems for computer grading.

For the purposes of this study, an instrument was developed to obtain student personal information and demographic data and printed on both the back and front of the answer sheet. Data were collected on sex, date of expected graduation, eligibility for a teaching certificate, school level(s) the student would be certifiable to teach, major and minor, and college level consumer education courses completed.

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[8]Scholastic Testing Services, 480 Meyer Road, Bensenville, Illinois, 60106.

The student was also requested to write in the father's occupation in the space provided on the front of the answer sheet. Instructions for filling in the demographic data were printed on the reverse side of the answer sheets. The administrator was requested to give the instructions orally while following the description for "Administering the Test."

Procedural communications and instructions for filling out the answer sheets were pre-tested with three separate education and home economic classes at Virginia Polytechnic Institute and State University, Blacksburg, Virginia, during December 1976 and January 1977. Instructions were to be read verbatim from the "Suggestions for Pre-test Arrangements" and "Administering the Test" and students were to fill in the demographic data. Questions and/or possible areas of confusion were noted during pre-testing and modified accordingly.

Test Scoring Procedures and Data Analysis

Upon receipt of the completed answer sheets each was examined individually for possible errors in the student information section. The omission of "music" from the list of possible majors and minors due to an oversight in the final proofing was corrected for most of the institutions by adding a note to the detailed description of "Suggestions for Pre-test Arrangements" and "Administering the Test." For those schools where the test was administered prior to correction of the error, "music" was categorized with "art" whenever the student wrote in "music" on the answer sheet. This was corrected by filling in the proper circle in approximately 40 cases.

For those students who had majors or minors not listed on the answer sheet these were re-coded or eliminated at the advice of the project consultants. Wherever possible, these curriculums were classified under a related academic area such as "speech pathology" under "special education" (six cases) and "driver education" under "physical education" (two cases). Where these procedures were not considered proper and reliable, as in the case of "library science" (two cases), the major or minor was not classified and thus erased from the answer sheet and not included in the analysis. This occurred in eight instances.

Another difficulty was identified when the answer sheets were examined to check the columns for information on majors and minors. Since the pre-printed answer sheet had only ten spaces (numbered 0-9) for indicating major and minor, two columns were utilized for each. With a list of 15 majors and 15 minors, a full column and part of a second column were specified for the major as well as for the minor. Thus, spaces 0-9 in column 5 and 0-4 in column 6 were for designating the student's major while the same spaces in columns 7 and 8 were designated for indicating the minor. A problem became apparent when it was observed that some students filled in one of the circles numbered 5-9 in column 6 or 5-9 in column 8, for these circles did not indicate any information and should have been left blank. Some students filled in a circle in both columns 5 and 6 but none in columns

7 or 8. In such cases the second marking was erased, leaving information for one major and no minor. It appears that the second marking was supposed to indicate the student's minor, but they placed the marking in the wrong column. A few students filled in the same numbered circle in columns 5-8. In this case the last three markings were erased since the major was considered the most important factor. Approximately 150 students had difficulty in properly filling in the columns for major and minor.

The father's occupation as reported by the prospective teacher was converted to a numerical two-digit code and the proper circles filled in on the answer sheet in the appropriate spaces for computer analysis. O. D. Duncan's widely used "A Socioeconomic Index for All Occupations"[9] was the basis for the numerical coding of occupations. The index values which Duncan derived for some 425 occupations is a basic instrument for measuring socioeconomic status. Duncan's index is an elaboration of the first study of occupational prestige based upon a national sample, the NORC or North-Hatt study of 1947. Sixteen years later, Hodge, Trieman, and Rossi replicated the North-Hatt study and obtained a correlation of .99, thus indicating the stability of occupational prestige.[10] Although the index is based on the occupations reported in the 1950 census, it has been used extensively and is still considered one of the most reliable indexes of socioeconomic status.

Since the Duncan index does not provide for separate numerical rankings of military personnel, August B. Hollingshead's Two Factor Index of Social Position was used as a supplement in order to categorize military occupations.[11] Hollingshead's index is based on 1) the precise occupational role of the head of household and 2) the amount of formal schooling received. Specific military ranks were given a numerical code based on the status of specific occupations of the same social strata grouped concurrently in Hollingshead's index; this rating was then converted to the corresponding numerical rating in Duncan's index.

Answer sheets were graded by op-scan computer and a printout returned to each institution within two weeks of receipt of the answer sheets. Each printout included student names (when this information was provided by the student as it was optional), individual scores,

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[9]Duncan, Otis D. "A Socioeconomic Index for All Occupations," in Albert J. Reiss, Jr. (ed.), Occupations and Social Status. The Free Press, Glencoe, Ill., 1961, pp. 109-161.

[10]Hodge, Harold W., Donald Trieman and Peter H. Rossi, "Occupational Prestige in the U. S.," American Journal of Sociology, 70, 1964, pp. 286-302.

[11]Hollingshead, August B., Two-Factor Index of Social Position, 1965 Yale Station, New Haven, Connecticut, 1957.

means and standard deviations for Forms "A" and "B", plus item analysis for each test form (number correct out of a possible 55 and the percent correct and point biserial correlations on each question). A letter explaining the printout and the published "Teacher's Manual of Directions" for the "Test of Consumer Competencies"[12] was mailed to each test administrator along with a sincere expression of appreciation for their cooperation in the study.

Since the testing periods ended in April, data were analyzed during May. To fulfill the objectives of the research project as required under the terms of the grant, descriptive statistics were utilized. Statistics included means, standard deviations, Kuder-Richardson Formula Number 20, point biserial correlations, one-way analysis of variance, Duncan's multiple range test, and student's t-test.

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[12]Stanley, Thomas O., E. Thomas Garman, and Richard D. Brown, "Teacher's Manual of Directions," Test of Consumer Competencies, Scholastic Testing Service, Inc., Bensenville, Illinois, 1976.

THE FINDINGS

At the 84 institutions of higher education accredited by the National Council for Accreditation of Teacher Education, 5,602 prospective teachers completed the *Test of Consumer Competencies*. To ease the data collection process, test administrators at each institution were given a variety of approaches to use. In order not to appear to be discriminating against certain students, the test administrators very importantly were given leeway to test all prospective graduates in certain groupings rather than eliminate some of them. Thus, at a student teaching seminar held on campus, for example, all those in attendance were tested rather than just those who were graduating through the summer session. Similarly, some institutions tested intact classes as a whole which also included a few students who actually were not eligible for inclusion in this study.

These procedures assisted the test administrators in the collection of data and also provided test information on all the students they tested which was returned to them. Thus, the procedures provided data on some persons who did not meet the criteria for inclusion in the results. Three questions were asked to insure consistency in the sample: whether or not they were going to be eligible to teach, were they going to graduate by August of 1977, and at what level(s) would they be certifiable to teach.

Of the 5,602 persons tested, 867 indicated that they were graduating after August of 1977 and thus are excluded from these findings, 133 marked on the answer sheet that they would not be eligible for certification to teach, and 58 indicated that they would not be certifiable to teach. In answering these three questions, 76 persons also made errors by recording their choice of response in an inappropriate place. Additionally, as many as 666 persons left one of the three questions blank by omission. Some overlap occurs in these responses determining ineligibility, and as a result, data on 4,309 prospective teachers were obtained which was usable.

General Achievement on the TCC

Because of the equivalency of the two test forms as shown originally in the norming of the Test of Consumer Competencies and to help assure accuracy in individual responses, both test forms were utilized. Each NCATE institution received a testing packet with the test forms interleafed in an A, B, A, B format.

Of the 4,309 usable tests, 2,162 prospective teachers completed Form A and 2,147 completed Form B. On Form A the mean achievement raw score on the 55-item test was 32.35 with a standard deviation of 6.24 and a standard error of measurement of 3.25. Form A had a Kuder-Richardson Formula Number 20 reliability estimate of 0.73. On Form B the mean achievement raw score was 32.99 with a standard deviation of

5.85 and a standard error of measurement of 3.24. Form B had a Kuder-Richardson Formula Number 20 reliability estimate of 0.69. Because of the extreme similarity of mean scores on the equivalently designed test forms with Form B being less than 2/3 of one raw score point higher than Form A (almost precisely the same as in the norming data), the tests were again considered to be equivalent. Thus, the data can be reported as composite figures. Overall achievement on the Test of Consumer Competencies by the 4,309 prospective teachers was 32.67 with a standard deviation of 6.06 and this converts to 59.4 percent correct on the 55-item test. Table 6 shows the frequency distribution of the scores on the Test of Consumer Competencies.

Number of Graduates at NCATE Institution

For purposes of this study the total size of the institution was not a classification factor. The schools were arranged and sampled by size according to the number who would be certifiable to teach and graduate from each NCATE institution. Each institution was asked to report the specific number of prospective teachers they would graduate who would be certifiable to teach between the fall of 1976 through the summer of 1977. This is indicative of the size of the undergraduate teacher education programs at each institution.

The mean scores of the prospective teachers are shown in Table 7 according to the number of graduates who will be certifiable to teach. A one-way analysis of variance of score by size of institution (based on the number of certifiable graduates) revealed no significant differences at or beyond the 0.05 level. Thus, the size of the teacher education program, as indicated by the number of graduates certifiable to teach and graduating from the NCATE institutions, was not related to achievement on the Test of Consumer Competencies.

Geographic Regions

The 540 NCATE institutions are geographically distributed across the country and a state-by-state distribution is shown in Figure 1. The 84 sample institutions were geographically distributed as shown in Figure 2. Strong similarities between the sample and the population as a whole can be observed by comparing the two figures.

Achievement on the Test of Consumer Competencies can be compared among the different regions. As shown in Table 8 the prospective teachers from the Western region NCATE institutions scored highest while the prospective teachers from the Southern region had the lowest achievement on the Test of Consumer Competencies. A one-way analysis of variance revealed a significant difference among the means of the five regions at or beyond the .001 level. Further analysis using Duncan's multiple range test indicated that students in the Mountain Plains, North Central, and Western regions scored significantly higher (0.001 level) than students attending schools in the Eastern and Southern regions as shown in Table 9.

TABLE 6

FREQUENCY DISTRIBUTION OF SCORES ON THE TEST OF CONSUMER COMPETENCIES
(55 - Item Test)

Score	Frequency	Frequency as a Percent	Cumulative Frequency as a Percent
2	1	0.0	0.0
6	1	0.0	0.0
9	1	0.0	0.1
10	2	0.0	0.1
11	4	0.1	0.2
12	2	0.0	0.3
13	3	0.1	0.3
14	6	0.1	0.5
15	6	0.1	0.6
16	6	0.1	0.7
17	12	0.3	1.0
18	15	0.3	1.4
19	21	0.5	1.9
20	33	0.8	2.6
21	42	1.0	3.6
22	58	1.3	4.9
23	73	1.7	6.6
24	97	2.3	8.9
25	114	2.6	11.5
26	152	3.5	15.1
27	174	4.0	19.1
28	224	5.2	24.3
29	222	5.2	29.4
30	235	5.5	34.9
31	260	6.0	40.9
32	299	6.9	47.9
33	264	6.1	54.0
34	273	6.3	60.3
35	281	6.5	66.9
36	274	6.4	73.2
37	231	5.4	78.6
38	199	4.6	83.2
39	178	4.1	87.3
40	154	3.6	90.9
41	108	2.5	93.4
42	80	1.9	95.3
43	65	1.5	96.8
44	67	1.6	98.3
45	33	0.8	99.1
46	14	0.3	99.4
47	10	0.2	99.7
48	7	0.2	99.8
49	6	0.1	100.0
50	1	0.0	100.0
51	1	0.0	100.0
TOTAL	4,309	100.0	100.0

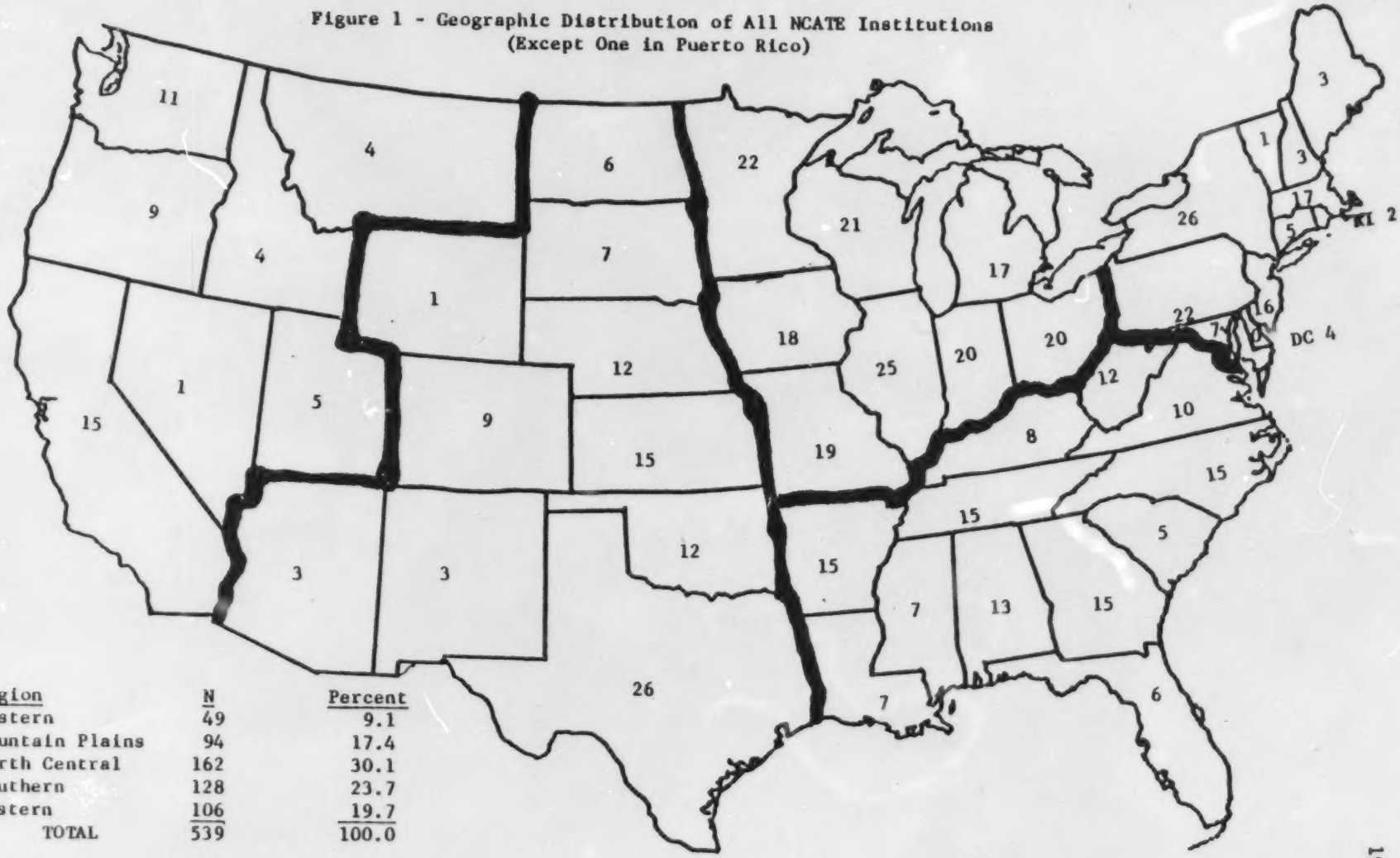
TABLE 7

NUMBER OF GRADUATES AT NCATE INSTITUTIONS

Number of Certifiable Graduates	N	Mean Score	Standard Deviation
1 - 99	384	33.00	5.76
100 - 199	392	32.34	6.29
200 - 399	1,001	32.66	5.93
400 - 599	1,121	32.71	5.91
600 - 999	734	32.48	6.31
1,000+	658	32.75	6.22
TOTAL	4,290*	32.67	6.06

* Nineteen respondents failed to indicate their school number and were not assigned one because of possible doubt as to which size category they belonged.

Figure 1 - Geographic Distribution of All NCATE Institutions
(Except One in Puerto Rico)



Region	N	Percent
Western	49	9.1
Mountain Plains	94	17.4
North Central	162	30.1
Southern	128	23.7
Eastern	106	19.7
TOTAL	539	100.0

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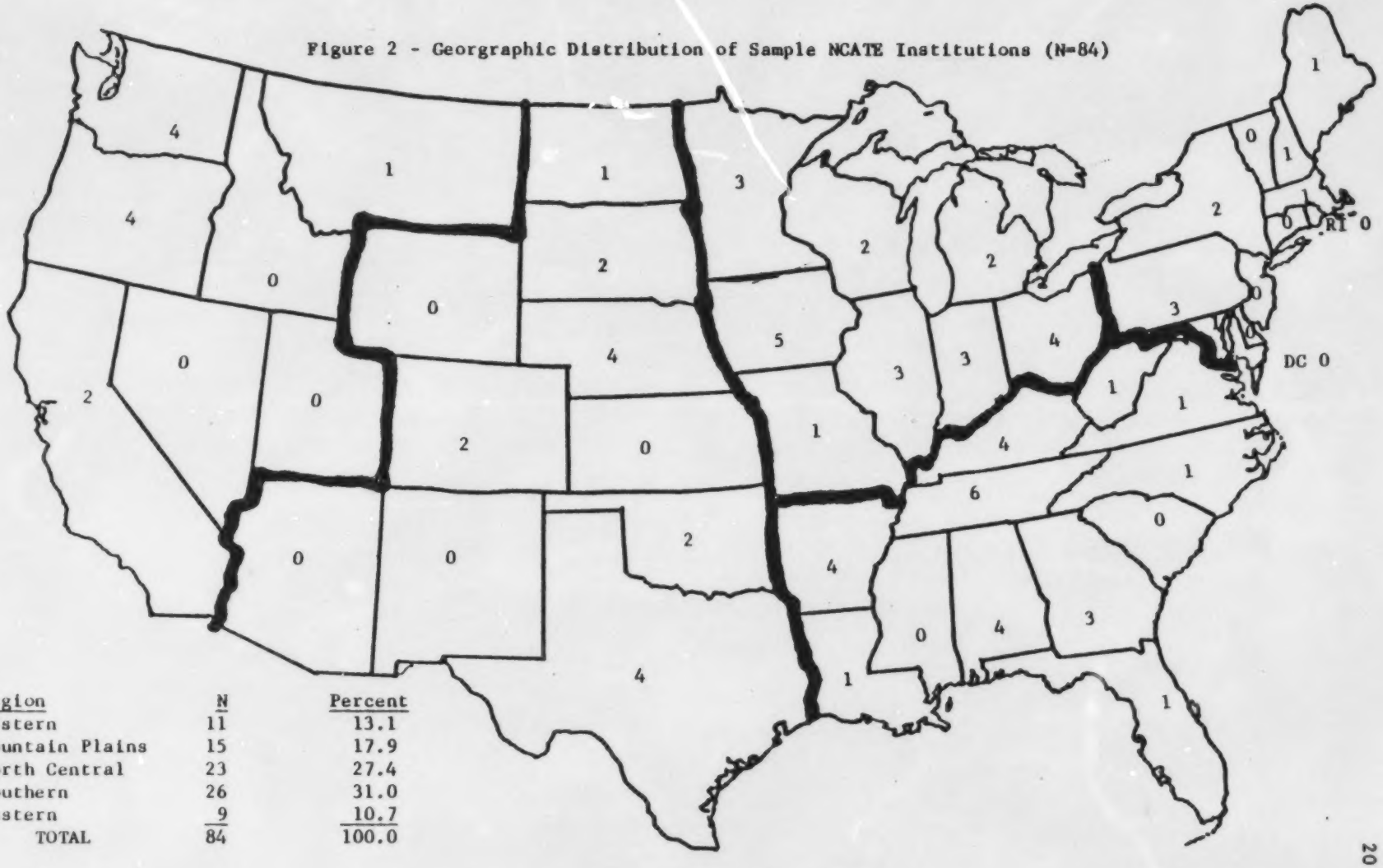
Figure 2 - Georgraphic Distribution of Sample NCATE Institutions (N=84)



Region	N	Percent
Western	11	13.1
Mountain Plains	15	17.9
North Central	23	27.4
Southern	26	31.0
Eastern	9	10.7
TOTAL	84	100.0

TABLE 8

REGIONAL ACHIEVEMENT ON THE TCC

Region	N	Mean Score	Standard Deviation
Western	339	33.48	6.01
North Central	1,312	33.43	6.15
Mountain Plains	789	33.15	5.93
Eastern	588	32.01	5.88
Southern	1,262	31.62	5.94
TOTALS	4,290*	32.67	6.06

*Nineteen respondents failed to indicate their school number and were not assigned one because of possible doubt as to which region they belonged.

TABLE 9

REGIONAL ACHIEVEMENT DIFFERENCES WHICH WERE SIGNIFICANT*

Region	Mean Score	Mean Score
Western and Southern	33.48	31.62
Western and Eastern	33.48	32.01
Mountain Plains and Southern	33.15	31.62
Mountain Plains and Eastern	33.15	32.01
North Central and Southern	33.43	31.62
North Central and Eastern	33.43	32.01

*Paired means which were identified as significantly different at or beyond the 0.001 level by Duncan's multiple range test.

Expected Date of Graduation

Prospective graduates were tested between February and April which was relatively close to their expected date of graduation. Table 10 shows achievement according to when the respondents indicated they would graduate. Performance of a one-way analysis of variance revealed no significant relationships. Thus, achievement on the Test of Consumer Competencies for prospective teachers was similar regardless of their expected date of graduation.

Socio-Economic Status

The socio-economic status of the prospective teachers was determined by O. D. Duncan's "A Socioeconomic Index for All Occupations" (military personnel were classified by Hollingshead's "Two Factor Index of Social Position" and then converted to the Duncan scale). Previous studies have indicated the strength of this scale in differentiating among different socio-economic levels and, in general, researchers have found no particular significance with the second digit in the classification system. For example, statistical differences have not been consistently found between a numerical value of 82 for an editor or reporter and an 85 for a technical engineer. On the other hand, differences frequently have been noted with respect to the first digit of the 100-item scale, such as 75 for a chiropractor and 48 for a surveyor. Table 11 shows the socio-economic status of 3,851 prospective teachers who responded to this question broken down into tenths. Interestingly, using one-way analysis of variance no statistically significant differences were noted among the different classifications when grouped into tenths, eights, fifths, or fourths. This, therefore, indicates that the socio-economic status of the prospective teachers was not related to achievement on the Test of Consumer Competencies.

Sex of Prospective Teachers

Achievement on the Test of Consumer Competencies for the 1,231 males was 34.04 with a standard deviation of 6.32 while the 3,051 females averaged 32.13 with a standard deviation of 5.83 (27 persons omitted responding to this item). A t value of 9.15 was obtained which is significant beyond the 0.001 level, thus indicating that males scored significantly higher on the Test of Consumer Competencies than females.

Level of Certification

The prospective teachers were asked to indicate at which level(s) they would be certified to teach, either elementary, secondary or both. Table 12 shows the achievement of the three groups of prospective teachers. Those expecting certification to teach secondary school scored highest on the Test of Consumer Competencies while those being certified to teach both in elementary and secondary schools scored lowest. The results of a one-way analysis of variance revealed that the mean scores for the level of certification were statistically significant at or beyond the 0.001 level. Duncan's multiple range test

TABLE 10

EXPECTED DATE OF GRADUATION

Date of Graduation	N	Mean Score	Standard Deviation
January - February	89	33.71	6.38
March - April	347	33.15	6.36
May - June	3,098	32.63	5.97
July - August	775	32.48	6.22
TOTAL	4,309	32.67	6.06

TABLE 11

SOCIO-ECONOMIC STATUS
(N=3,851)

SES Value*	N	Mean Score	Standard Deviation
≥ 1 and <10	133	32.57	6.02
≥10 and <20	765	32.92	6.24
≥20 and <30	169	32.42	6.39
≥30 and <40	305	32.62	5.82
≥40 and <50	365	32.96	5.91
≥50 and <60	355	32.25	5.70
≥60 and <70	797	32.68	6.04
≥70 and <80	463	32.56	5.85
≥80 and <90	393	32.97	5.93
≥90 and <100	106	33.18	6.11

* The lowest value on the scale is 1 for a laborer in a yarn, thread or fabric textile mill and the highest value of 96 is for an osteopath or dentist.

TABLE 12

LEVEL OF CERTIFICATION

Level	N	Mean Score	Standard Deviation
Elementary	1,757	31.99	5.76
Secondary	1,548	34.03	6.16
Both Elementary and Secondary	1,004	31.76	6.04
TOTAL	4,309	32.67	6.06

indicated that the differences between elementary and secondary as well as between secondary and those who expected to be certified to teach both elementary and secondary were significant at or beyond the 0.001 level as shown in Table 13. This analysis indicated that prospective teachers expecting certification to teach in both elementary and secondary schools and those expecting certification to teach in elementary schools consistently scored lower on the Test of Consumer Competencies than those expecting certification for the secondary level.

Major of Prospective Teacher

Categories for 15 possible majors or combinations of majors were available for the prospective teachers to indicate their major. Table 14 lists the majors and the achievement by each group on the Test of Consumer Competencies. The highest scoring majors on the Test of Consumer Competencies ranked in descending order were Social Studies, History or Geography (35.18); Science (35.09); and Home Economics (34.99). The lowest scoring majors in descending order were Special Education (31.68), Art and Music (31.21), and Physical Education and Health (31.02). A one-way analysis of variance revealed significant differences among the majors at or beyond the 0.001 level. Further analysis using Duncan's multiple range test identified numerous groupings of majors where significant differences appeared at or beyond the 0.001 level. Due to the large number of majors and the numerous combinations of significantly different majors these data are too complex to report individually. Since the total number of prospective teachers was so large significant differences appear more readily than with smaller groups. Thus, only the most extreme differences between mean scores for majors might be interpreted with any strong degree of confidence to indicate notable differences in performance.

Minors Which Were Different Than Majors

Of the 4,309 prospective teachers, 1,571 reported that their minor area of study was different than their major. Some students, of course, had a comprehensive major where both the major and minor were the same but these persons are omitted from this analysis. The question addressed here is how did the prospective teachers with minors different than their majors perform on the Test of Consumer Competencies. Table 15 shows the breakdown of the 15 possible minors indicated.

The data on minors were subjected to the same statistical analysis as the majors. Of the 15 categories of minors numerous significant relationships appeared with minors in Home Economics and Business scoring significantly higher than other minors. However, it is difficult to interpret these results since the interrelationship between major and minor may account for differences in achievement by minor of prospective teachers when it is different from the major. Further analysis is necessary before conclusions can be drawn from these data.

Completion of Consumer Education Related Courses

The prospective teachers were given an opportunity to indicate if they had previously completed one or more consumer education related courses. Nine separate courses were identified by title and

TABLE 13

LEVEL OF CERTIFICATION DIFFERENCES WHICH WERE SIGNIFICANT*

Levels	Mean Score	Mean Score
Elementary/Secondary	31.99	34.03
Secondary/Both	34.03	31.76

*Paired means which were identified as significantly different at or beyond the 0.001 level by Duncan's multiple range test.

TABLE 14

ACHIEVEMENT BY MAJOR OF PROSPECTIVE TEACHER

Major	N	Mean Score	Standard Deviation
Social Studies, History or Geography	264	35.18	5.87
Science	170	35.09	5.91
Home Economics	139	34.99	6.84
Business	171	34.77	5.95
Industrial Arts or Trades and Industry	111	34.76	6.15
Mathematics	116	34.38	5.88
Sociology and Pyschology	84	34.35	6.28
English	224	33.87	5.63
Agriculture	13	33.77	8.11
Speech	77	33.09	5.95
Foreign Languages	93	32.52	5.81
Elementary Education	1,464	31.91	5.79
Special Education	340	31.68	5.79
Art and Music	268	31.21	6.48
Physical Education and Health	425	31.02	5.62
Errors in Recording Major	94	-	-
Omitted Reporting Major	256	-	-
TOTAL	4,309	32.67	6.06

TABLE 15

ACHIEVEMENT BY MINOR OF PROSPECTIVE TEACHERS IF DIFFERENT FROM MAJOR
(N=1,571)

Minor	N	Mean Score	Standard Deviation
Home Economics	17	36.29	6.71
Business	48	34.94	5.51
Mathematics	87	34.20	5.24
Science	85	34.15	6.13
Physical Education and Health	99	33.77	5.90
Speech	47	33.29	5.75
Social Studies, History or Geography	226	33.23	5.58
Sociology and Psychology	160	33.00	5.82
Foreign Languages	55	32.71	6.12
Elementary Education	273	32.38	6.17
Special Education	110	32.20	6.12
English	267	31.99	6.12
Art and Music	68	31.62	6.06
Industrial Arts or Trades and Industry	20	31.18	6.05
Agriculture	9	29.56	9.37
TOTAL	1,571	32.86	6.00

instructions provided for identification of having completed both more than one course or two or more courses with the same title. (Those who may have completed three courses with the same title were directed to indicate that they had a third course by marking one with a similar title; it is doubtful that any prospective teachers had to make such an indication.)

Table 16 shows the achievement of the prospective teachers according to their having completed one or two consumer education related courses with the same course title. Of the 4,309 prospective teachers, 508 completed one or more consumer education related courses; this amounts to less than 12 percent. Those 508 persons completed a total of 779 consumer education related courses. It can be observed that relatively few of the prospective teachers, compared to the total usable N of 4,309, had completed one or more consumer education related courses. The mean of this group was 34.14 with a standard deviation of 6.20. Data on the consumer education courses is shown in descending order. By inspection it appears that those prospective teachers who had completed any one of the several consumer education related courses scored higher on the Test of Consumer Competencies than did all the prospective teachers combined (32.67).

Prospective teachers who completed only one consumer education related course totaled 307, with a mean score of 33.66 and a standard deviation of 6.17. Data for those with only one consumer education related course is presented in Table 17. Table 18 reveals the achievement of those who completed only one consumer education related course, those with one or more courses and those without any consumer education related courses. As shown in Table 19, a t-test revealed significant differences at or beyond the 0.001 level between those without completing a course and those completing only one course as well as between those without completing a course and those completing one or more courses. Thus, prospective teachers who completed at least one consumer education related course scored higher on the Test of Consumer Competencies than those prospective teachers who had not completed such a course.

Achievement by Content Areas on the TCC

Fourteen content areas of consumer education are identifiable on the Test of Consumer Competencies with the amount of questions per area ranging from three to five. With 4,309 prospective teachers completing the test, certain areas were found to be ones about which the prospective teachers knew more than others. The four areas in which the prospective teachers were most knowledgeable as shown in Table 20 were, in descending order, Recreation (76%), Clothing (73%), The Individual Consumer in the Marketplace (68%), and Furnishings and Appliances (68%). The three areas in which the prospective teachers indicated the least amount of cognitive understanding as measured by the Test of Consumer Competencies were, in descending order, Savings and Investment (50%), Food (48%), and Taxes (45%).

Item Analysis on Test Form A

Item analysis on Form A of the Test of Consumer Competencies with 2,162 prospective teachers completing the test resulted in positive

TABLE 16

COMPLETION OF CONSUMER EDUCATION RELATED COURSES

Course Title	N	Mean Score	Standard Deviation
Consumer Problems			
1 Course	52	35.79	6.17
2 Courses	7	33.71	5.65
Money Management			
1 Course	13	35.77	7.14
2 Courses	8	38.38	4.44
Consumer Law			
1 Course	24	35.67	6.34
2 Courses	8	36.50	6.39
Personal Finance			
1 Course	68	35.37	5.73
2 Courses	9	34.89	6.45
Family Finance			
1 Course	49	34.94	5.97
2 Courses	3	34.33	8.74
Home Management			
1 Course	103	34.89	7.31
2 Courses	46	34.30	5.48
Family Economics			
1 Course	59	34.31	5.89
2 Courses	4	31.25	2.50
Consumer Economics			
1 Course	223	33.91	5.94
2 Courses	13	31.62	8.79
Consumer Education			
1 Course	83	33.55	6.29
2 Courses	7	36.71	3.15
TOTAL	779	34.14	6.20

TABLE 17

THOSE WHO HAD ONLY ONE CONSUMER EDUCATION RELATED COURSE

Course Title	N	Mean Score	Standard Deviation
Consumer Problems	14	34.36	5.85
Money Management	4	33.25	7.72
Consumer Law	8	39.00	6.59
Personal Finance	39	34.79	5.29
Family Finance	27	34.00	6.17
Home Management	20	30.30	9.07
Family Economics	33	33.09	5.63
Consumer Economics	136	33.46	6.08
Consumer Education	26	34.04	4.72
TOTAL	307	33.66	6.17

TABLE 18

ACHIEVEMENT OF THOSE WITH AND WITHOUT HAVING COMPLETED ONE OR MORE CONSUMER EDUCATION RELATED COURSES

	N	Mean Score	Standard Deviation
Those Without Completing a Course	3,801	32.47	6.01
Those Completing Only One Course	307	33.66	6.17
Those Completing One or More Courses	508	34.14	6.20

TABLE 19

CONSUMER EDUCATION RELATED COURSE DIFFERENCES WHICH WERE SIGNIFICANT

	Mean Score	t Value
Those Without Completing a Course	32.47	
		3.27*
Those Completing Only One Course	33.66	
Those Without Completing a Course	32.47	
		3.39*
Those Completing One Or More Courses	34.14	

*Significant at or beyond the 0.001 level.

TABLE 20

PERCENT CORRECT FOR TOTAL OF ITEMS IN AREAS ON FORM A AND FORM B

Content Area	Equivalent Form A Item	Correct Responses	Equivalent Form B Item	Correct Responses	Percent Correct For Form A & B
	15	1470	24	1640	
Recreation	24	1514	7	1860	.76
	26	1496	50	1798	
	8	1825	9	1936	
Clothing	25	1522	34	1433	.73
	33	1375	51	1377	
	5	1548	21	1433	
The Individual	9	865	6	1557	
Consumer in	11	1268	17	1611	.68
the Marketplace	16	1709	33	1693	
	17	1524	4	1346	
Furnishings and	6	1811	2	1755	
Appliances	40	668	30	1166	.68
	43	1345	54	1988	
	14	1446	20	1231	
Money	22	1382	28	1197	.66
Management	23	1478	3	2021	
	38	773	5	1778	
	3	1787	12	1575	
The Consumer	10	2060	39	1288	
in Society	41	1037	36	1572	.64
	52	864	27	1663	
	55	1377	49	611	
	13	1240	23	1050	
Transportation	19	630	26	1763	.64
	36	1862	1	1676	
	2	1592	29	1269	
	7	1433	10	503	
Insurance	18	1698	32	1059	.57
	35	631	41	1262	
	48	1313	14	1567	

SEE FOLLOWING PAGE

TABLE 20 CONTINUED

PERCENT CORRECT FOR TOTAL OF ITEMS IN AREAS ON FORM A AND FORM B

Content Area	Equivalent Form A Item	Correct Responses	Equivalent Form B Item	Correct Responses	Percent Correct For Form A & B
	1	1890	52	1405	
	12	2103	11	1258	
Consumer Credit	46	1154	18	1013	.56
	49	978	45	860	
	51	438	13	1019	
Health, Services,	4	1918	8	1764	
Drugs, and	21	1476	55	636	.52
Cosmetics	34	988	46	620	
	54	479	53	1113	
	31	1180	47	376	
Housing	39	459	22	1006	.51
	42	1126	35	1890	
	45	1174	15	1524	
	20	1144	40	787	
Savings and	32	1222	48	489	.50
Investment	37	1195	31	1294	
	44	1590	44	983	
	28	1533	25	1736	
Food	47	926	42	745	.48
	53	388	37	842	
	27	1193	38	427	
Taxes	29	1573	19	898	.45
	30	679	43	1040	
	50	588	16	1415	

point biserial correlations for all 55 questions. Also, 41 of the 55 questions discriminated at or above the 0.20 level: 23 questions at or above the 0.20 level but below 0.30, 13 questions at or above the 0.30 level but below 0.40, and 5 questions at or above the 0.40 level.

Item Analysis on Test Form B

Item analysis on Form B of the Test of Consumer Competencies with 2,147 prospective teachers completing the test resulted in positive point biserial correlations for all 55 questions. Also, 42 of the 55 questions discriminated at or above the 0.20 level: 28 questions at or above the 0.20 level but below 0.30 and 14 questions at or above the 0.30 level but below 0.40.

Achievement of Prospective Teachers Compared to Norming Data

The norming data for the Test of Consumer Competencies came from 7,683 secondary school students in the state of Illinois. As shown in Table 21 the achievement of the prospective teachers was considerably higher than the secondary school students, thus indicating that the prospective teachers knew more about cognitive consumer education concepts as measured by the Test of Consumer Competencies than do secondary school students.

TABLE 21

ACHIEVEMENT OF PROSPECTIVE TEACHERS COMPARED TO NORMING DATA

Grade Level	Number		Mean		Standard Deviation	
	Form A	Form B	Form A	Form B	Form A	Form B
8	1,103	1,125	19.931	19.965	5.570	5.403
9	583	575	20.359	20.969	5.482	5.649
10	608	599	22.043	22.900	6.202	5.973
11	813	809	24.576	24.888	6.334	5.954
12	750	718	26.797	27.698	7.031	6.952
Prospective Teachers	2,162	2,147	32.348	32.989	6.239	5.846

DISCUSSION, IMPLICATIONS AND RECOMMENDATIONS

Discussion and Implications

The Test of Consumer Competencies effectively and reliably measured the cognitive education knowledge of the 4,309 prospective teachers graduating from NCATE institutions. Overall achievement was slightly less than sixty percent, a score that does not seem to indicate a high level of comprehension of cognitive consumer education concepts. Since many states require that consumer education be incorporated into the elementary and secondary curriculum, it seems that prospective teachers may very well be required to teach a subject in which they do not possess a high level of cognitive understanding and do not have much academic preparation. Those prospective teachers who had completed one or more consumer education related courses scored higher than those prospective teachers who had not completed such a course. This supports the need for incorporating consumer education courses in the undergraduate program for prospective teachers.

The prospective teachers were most knowledgeable in the consumer education areas of Recreation, Clothing, The Individual in the Marketplace, and Furnishings and Appliances while evidencing the least knowledge in the areas of Savings and Investment, Food, and Taxes. Since less than twelve percent of the prospective teachers completed a consumer education related course the poor achievement on those test questions pertaining to Savings and Investment, Food, and Taxes might be primarily attributed to a lack of life experiences in these areas.

Achievement on the Test of Consumer Competencies was not related to the expected date of graduation of the prospective teachers or to the size of the institution as indicated by the number who would be certifiable to teach and the number of graduates at each institution. Since the expected date of graduation covered a range of only eight months which was equivalent to one semester plus a summer session, the lack of relationship is not surprising. The relative consistency of scores among teacher education programs ranging from less than 25 graduates per year to more than 1,400 is more notable.

Another noteworthy difference was achievement by geographic region with those prospective teachers from the Western, Mountain Plains and North Central institutions performing significantly better than their counterparts at Southern and Eastern schools. It is not known whether prospective teachers from the first three regions completed more consumer education related courses than those from Southern and Eastern institutions as analysis has not yet been conducted.

In contrast to generally held expectations, there was no significant difference in achievement on the Test of Consumer Competencies related to the socio-economic status of the prospective teachers. Another unusual finding of this research study was the significantly higher achievement by males compared to females who generally score higher on similar types of standardized tests.

Those prospective teachers certifiable to teach secondary school scored higher than those certifiable to teach elementary school or both elementary and secondary. These findings may be related to the better performance of students with certain academic majors, but further data analysis is needed before reaching final conclusions.

Prospective teachers with particular majors, such as "Social Studies, History or Geography," "Science," and "Home Economics" scored higher on the Test of Consumer Competencies than the other majors, thus indicating a greater degree of comprehension of cognitive consumer education concepts. Those majors scoring the poorest on the Test of Consumer Competencies, including majors in "Special Education," "Art and Music," and "Physical Education and Health" clearly evidenced a lower than average comprehension of the cognitive consumer education concepts when compared to all prospective teachers. These findings should be of concern to teacher educators and school administrators involved in planning and instituting a consumer education curriculum. If consumer education is taught, knowledge of these findings might influence the selection of the teacher. This might be particularly true if consumer education is taught as an individual course. Similarly, if consumer education is instituted as an integral part of existing classes, it is obvious from these results that many teachers may need additional training in consumer education concepts.

Recommendations

Two traditionally unexpected findings suggest the need for further research. There is a need to further examine why males achieved higher on the test than females and also why the socio-economic status of the prospective teachers was not related to achievement on the Test of Consumer Competencies.

Although this research was able to identify certain factors such as major, geographic region, level of certification, and sex that are statistically related to achievement on the Test of Consumer Competencies, more research needs to be conducted to ascertain what specific combinations of factors are related to high comprehension of cognitive consumer education concepts. Also, definitive answers are needed to the question, "Why do prospective teachers achieve well in some areas of consumer education and poorly in other areas?" One possible explanation is differences in life experiences of the prospective teachers. Further research might include questions on age and experiences of the subjects, since those persons with experience in marriage, childrearing, and family financial management may score higher than other persons lacking this practical experience.

Finally, since a higher level of comprehension of cognitive consumer education concepts for prospective teachers was directly related to completion of one or more consumer education related courses, it seems appropriate to recommend that college level consumer education related courses be included in the teacher education curricula for those who are expected to be responsible for teaching consumer education in the elementary and secondary schools, and this may include prospective teachers from all academic disciplines.

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